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DD/S&T# 3378/66

ORD 2424-66

24 JUN 1966

MEMORANDUM FOR: Deputy Director for Science and Technology

SUBJECT : Design Review Board

REFERENCE : DD/S&T 3146-66

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1. Recently, the memorandum referenced above was received from [redacted] requesting recommended changes or comments on a procedure that is currently being seriously considered for the comprehensive review of some of the technical problems on various projects. Currently ORD has in practice a review mechanism for its projects and programs that accomplishes much the same as, but is not as bureaucratic, formalistic, time-consuming and complex as the proposed Design Review Board procedure. The proposed scheme places an additional burden on the shoulders of presently over-tasked project officers, without any evident benefits. Unquestionably, effective management of DD/S&T projects is a worthy goal, but to erode, replace or abrogate the management responsibilities of Office Directors by redundant committee action is not the route to follow.

2. Frankly, I am concerned by the increasing number of bureaucratic proposals and concepts that purport to solve problems without reference to their impact on the efficient functioning of the Offices. In my opinion, the particular concept and apparently the words describing the procedure have been borrowed largely unchanged from the management manual of a manufacturing-oriented, profit motivated organization. Blind acceptance of a review technique successful in the industrial sector and recommending its unaltered application to the research and development activities of the DD/S&T reveals a lack of understanding or appreciation of the differences involved. Historically, the success of the agency in R&D efforts has been strongly dependent upon the ability to respond rapidly to demands for new or improved devices, systems or techniques by initiating aggressive programs without unnecessary expenditure of time, money and manpower on reviews that may buy insurance of success on a few but impedes the timely progress of many. A management judgment must be made relative to the point at which the premium paid for this insurance exceeds the penalty of failure.

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3. In evaluating the proposed Design Review Board procedure, I asked a number of OMD program managers and project officers to review the referenced memorandum. Selected excerpts for their responses attached in full are:

".....we take strong exception to the detailed recommendations contained in DD/S&T 3146-66, holding them to be, in the main,

- incompatible with the rapid and aggressive development required by the pressing collection problems which originally gave rise to the program,
- overly complex, redundant, and productive generally of a mass of mixed fact and opinion whose end use is obscure, and
- most wasteful of the time and energy of precisely those persons whose efforts are most critical to the success of a program.

This situation appears to be the result of the wholesale adoption of a non-intelligence, manufacturer-oriented reviewing format having very different objectives from our own, e.g., the volume production of a useful but standard item of equipment, under conditions of maximum profitability, rather than the solution of a vast number of complex collection problems with highly specialized and quantity-limited equipment, whose value declines most quickly with increasing time required for development under "normal" industrial conditions or the special conditions that exist in DOD development and procurement."

".....in the Agency the primary purpose of R&D is to provide means for the operational elements to collect intelligence, it necessarily follows that in order for R&D project officers to fulfill their responsibility in performing this function, they must exchange ideas with the operators and the raw intelligence consumers. It is only after the project officer knows the nature and priority of the required intelligence, and the constraints imposed on the requisite Agency operators

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who, through the use of an R&D product would collect the intelligence, that he is in a position to define a technical approach to the problem. In formulating a clear description of the problem and a proposed solution to it, the project officer will necessarily ascertain the state of the art in the relevant areas of technology and will consider using something in existing or modified form to do the job if possible. This latter stage is where the proposed committee would have its greatest value but it seems to me this value is severely limited. If the project officer has not identified the right problem to be worked on and gathered the technological information relevant to the problem before the committee meets, nothing that is well enough defined for the committee to consider will exist. On the other hand, if the project officer has done all of the prerequisite groundwork on a proposed project, it would seem that review in addition to that already imposed on new projects would not only be redundant but would greatly slow down our response time to technical requirements. It appears that the main question here is whether the 2% improvement that is likely to accrue from the proposed concept is worth the price that it would cost in terms of time and money. I personally don't think it is."

".....philosophically and historically the viability of R and D in the Agency is and will continue to be dependent upon a number of key interrelated factors including flexibility of problem approach and short reaction time. Both of these factors contribute heavily to the efficiency of utilization of time, effort, and money. For functional integrity of such a semi-autonomous system, the judgment of the Technical Officer on substantive matters must be trusted. Furthermore, implementation of action and accomplishment require that the Technical Officer be totally responsible and totally the management authority on substantive technical matters. If the Technical Officer is not capable of efficiently discharging these duties it follows by simple management logic that his services are not needed. At the same time, however, this whole concept of R&D implementation and management makes it incumbent upon management to see to it that the administrative actions

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required of the Technical Officer be "pared to the bone" in order that he may devote his time and best efforts to gaining the solution(s) to the technical requirement(s) and problem(s)."

".....I concur in principle to the need for design review but question whether a procedure as rigidized and formalized as that set forth will not create decreased effectiveness in our overall organization rather than improve efficiency as is intended. The administrative and support staff necessary to permit the use of such mechanisms as this simply do not exist in ORD."

".....if the proposed outline were to be followed on all of our projects, we would have to significantly increase our staff. To do the work outlined in any meaningful manner, even for simple projects, it would require at least half a day for three people to review the technical concept and to arrive at their decision. Another man day would be required to write the report in the detail specified.....From my own firsthand experience with design review boards, I can say with firm conviction that they are very expensive in time, manpower, and dollars if they are to be anything other than an exercise."

".....To apply the Design Review Board technique to Life Science research would not only be inefficient use of professional talent but would be an awkward attempt to fit the Life Science researcher into the mold of the production engineer.....I can assure you that this procedure, if adopted, would result in the loss of our entire professional staff of Life Science technical personnel."

4. I recommend that you carefully examine and evaluate the impact that this proposed procedure would have upon the effective and efficient management of R&D programs.

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ROBERT M. CHAPMAN
Director of Research and Development

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Distribution:

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